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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Huang et al	Art Unit :	2123
Serial No.:	09/635,116	Examiner :	Frejd, R.
Filed :	08/09/00		
Title :	METHOD FOR SIMULATING DRILLING OF ROLLER CONE BITS AND ITS APPLICATION TO ROLLER CONE BIT DESIGN AND PERFORMANCE		

Assistant Commissioner for Patents
Washington, DC 20231

RECEIVED
MAR 13 2002
Technology Center 2100

REPLY UNDER 37 CFR § 1.111

Dear Sir:

In response to the Office Action dated August 9, 2001, please amend the application as follows and consider the included remarks.

IN THE CLAIMS:

Please amend the claims as indicated below. A marked up copy of the claims showing insertions and deletions is attached as an appendix hereto.

1. (Amended) A method for determining an axial force acting on each one of a plurality of roller cones on a roller cone drill bit during drilling, comprising:

simulating drilling of an earth formation by the roller cone bit, the simulating comprising calculating, from a geometry of cutting elements on each of the roller cones and at least one characteristic of an earth formation being drilled by the drill bit, an axial force acting on each of the cutting elements;

simulating incrementally rotating the bit and recalculating the axial forces acting on each of the cutting elements;

repeating the simulating the incrementally rotating and recalculating for a selected number of incremental rotations; and

combining the axial force acting on the cutting elements on each one of the roller cones to determine the axial force acting on each of the roller cones.

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